ICT in Education in Uganda

Map of Uganda

The context

- Increasing enrolment since the introduction of UPE (from 2,000,000 before UPE to 7,500,000 in less than 10 years)
- Pressure on facilities especially class rooms with the average number of pupils per class growing from 45 to 100 in some of he schools,
- Increase in the teacher – pupil ratio
- Increase demand for books and other scholastic materials

The context contd.

- Government ban on recruitment of civil servants including teachers
- Effects of UPE beginning to reflect at secondary level with the first cohort of UPE pupils completing the primary cycle
- Unprecedented demand for innovative ways of teaching and learning to cope with the challenges
- Increasing demand for ICT as a solution
- Increasing cost and scarcity of electricity

The state of integration of ICT in education

- The process is still slow
- Pilot trials have been done at the primary and secondary school levels with promising results;
- Training of teachers to use ICT for pedagogical purposes,
- Development of multi media learning materials;
- At tertiary level, no systematic effort has been done apart from some core teacher education institutions where efforts are being done to integrate ICT in teacher training curriculum

Specific disciplines of focus

Interactive multimedia learning materials have been created as part of the trials in

- Social Studies for Primary 4 and 5,
- Mathematics P4 and 5,
- Geography Senior 1 and 2,
- Mathematics S1 and 2.
- Ordinary Level Biology

Policy matters

- An ICT policy in education has been developed and it is currently awaiting approval by parliament,
- Other supporting policies have been put in place i.e. waiving of taxes on all ICT materials, rural electrification to increase access;
- Integration of ICT in school budgets throughout the country

ICT initiatives in education Uganda/

- Acacia Initiative
- Alliance for Global Learning (AGL)
- I-Learn and schools Online
- SchoolNet
- Connect-Ed (MOES)
- Tele-centres

Initiatives contd.

- Information Infrastructure Agenda
- International Institute for Communication and Development
- Telematics Applications for Education
- CurriculumNet project – NCDC)
- Cyber schools (private sector involved in materials development and teachers orientation)

Research in ICT in education

The curriculum-net project

- This was an Action Research project to test the technical and operational feasibility; economic viability of ICTs in curriculum delivery process in Uganda;
- It examined the “value added” to subject areas of the educational system by ICTs and
- To which extent teaching and learning was enhanced

Research results

- Changes in learning styles:

•Students became more interested in geography and mathematics.
• Students were more eager to attend lessons than before.
• Students started practicing in peer teaching
• Students became self driven regarding revision and searching for information *(discovering on their own)*
• Students became more attentive in class

Results contd.

Learning styles:

- Students became independent – *could study with minimal assistance from the teacher*
- Students were studying without coping notes – *they used diskettes*
- Increased students' concentration during the lesson
- Students read a head of what had been covered in class

The use of ICT based materials also changed the teachers' ways of teaching in that;

- Teachers made better lesson preparation than before and their lessons became more practical. The content was organized in such a way that students' learnt from known to unknown.

- Teaching became less cumbersome as students could teach themselves and consolidate what they had learnt in classroom.

- Teachers became more of facilitators, that is, ICT based instructional materials attracted students' attention, simplified the subject matter and hence saved time, in addition to making learners less dependent on the teachers.

- Some teachers experienced a complete transformation in their pedagogical practices, with one going to Germany for post graduate studies in ICT enhanced learning and the other practically engaging ICTs in teaching through developing own interactive lessons using PowerPoint and web templates.

Besides the benefits above, teachers' and students' levels of competence and confidence in using ICTs to teach and study grew as shown by the graph and table below.

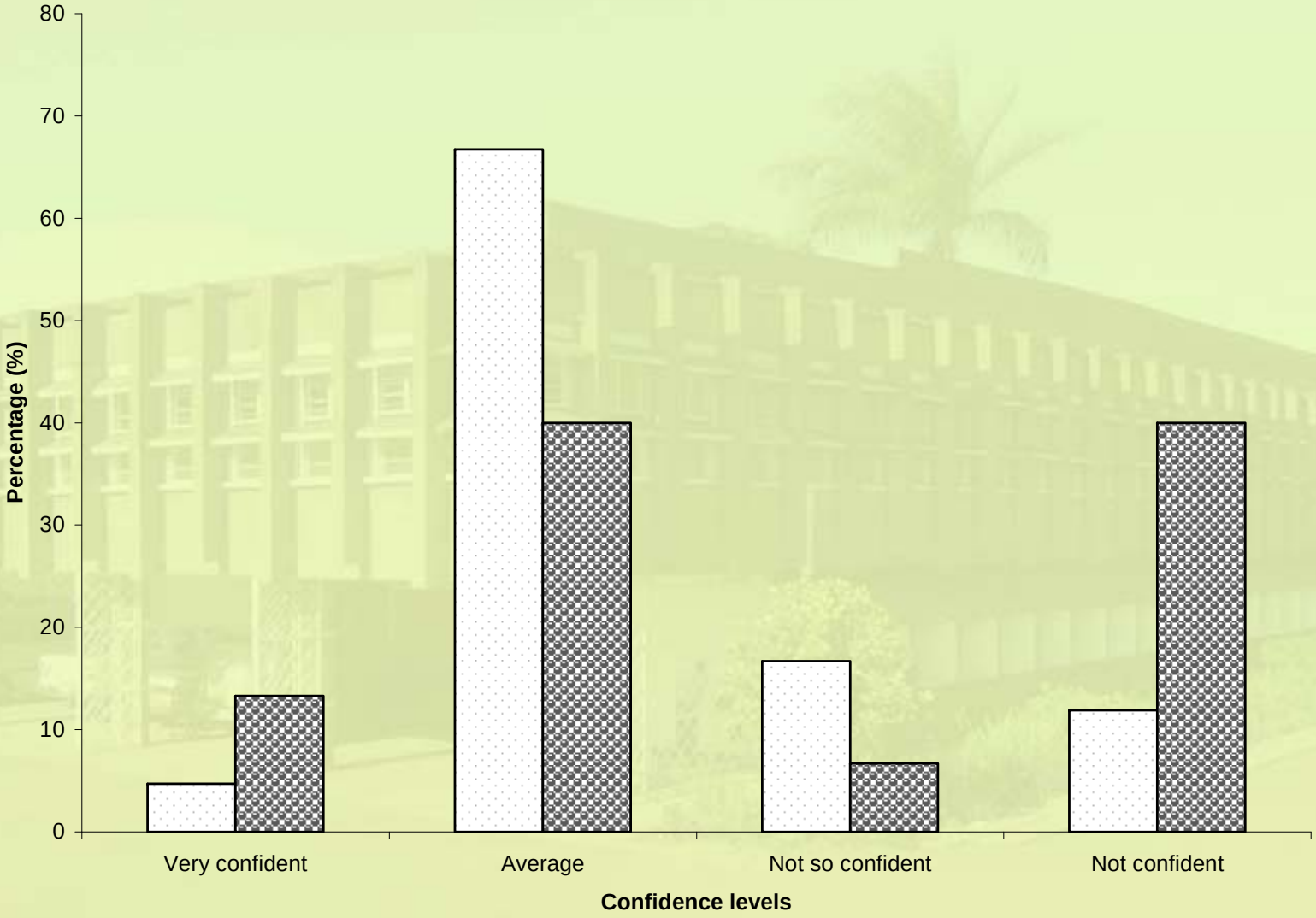

Fig. 3: Students' and Teachers' confidence in using a computer

Ways in which teachers and students utilized computers under the project;

Utilisation of computer	**Students n = 56**	**Teachers n = 14**
Access learning materials	28	-
Teaching and peer teaching	16	09
Searching for information on Internet	12	07
Entertainment – games and music	11	-
Communication with friends	09	06
Preparing tests and examinations	-	07
Preparing class records	-	04
Prepare reports	-	05

Challenges met by teachers and students during the implementation

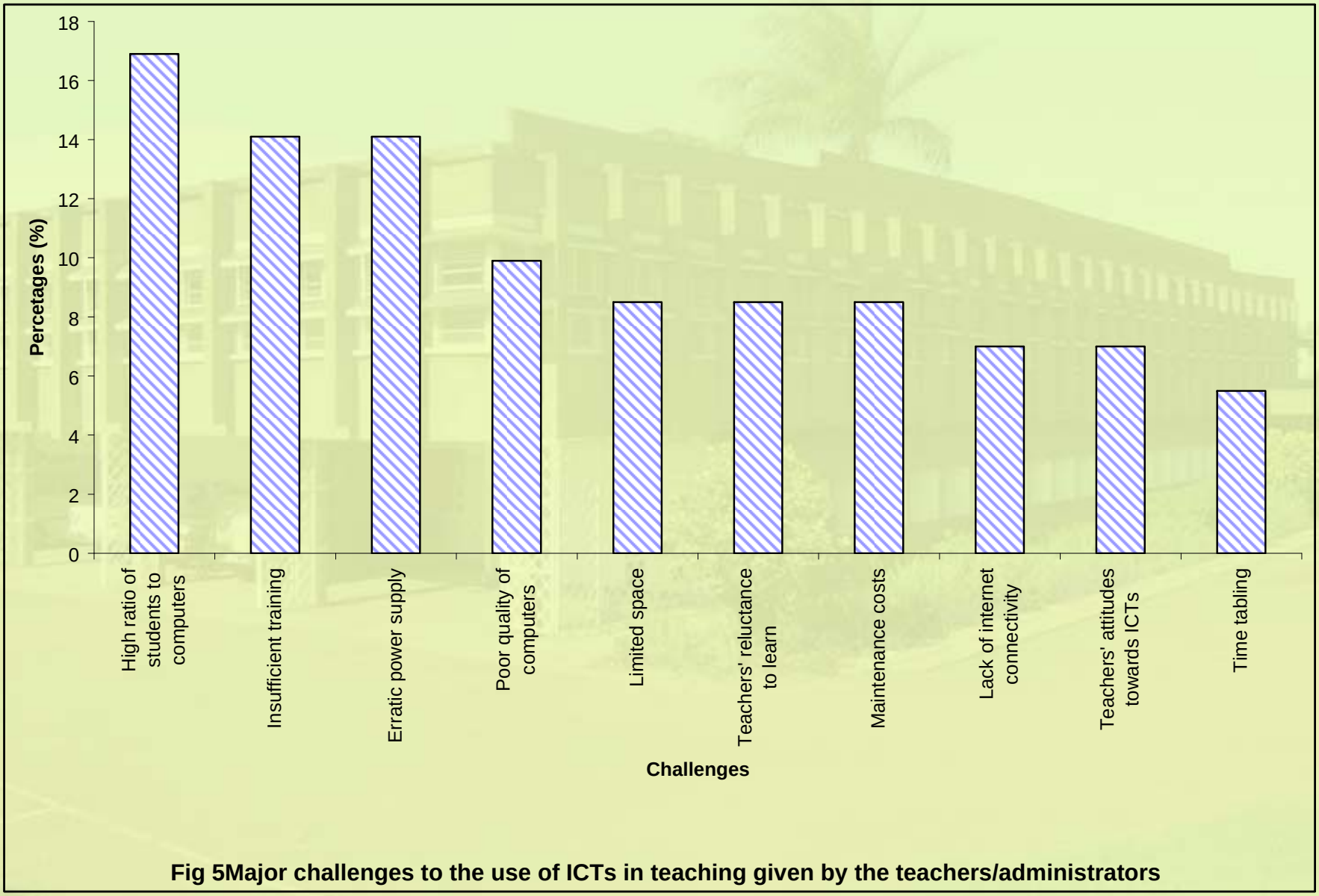

Fig 5Major challenges to the use of ICTs in teaching given by the teachers/administrators

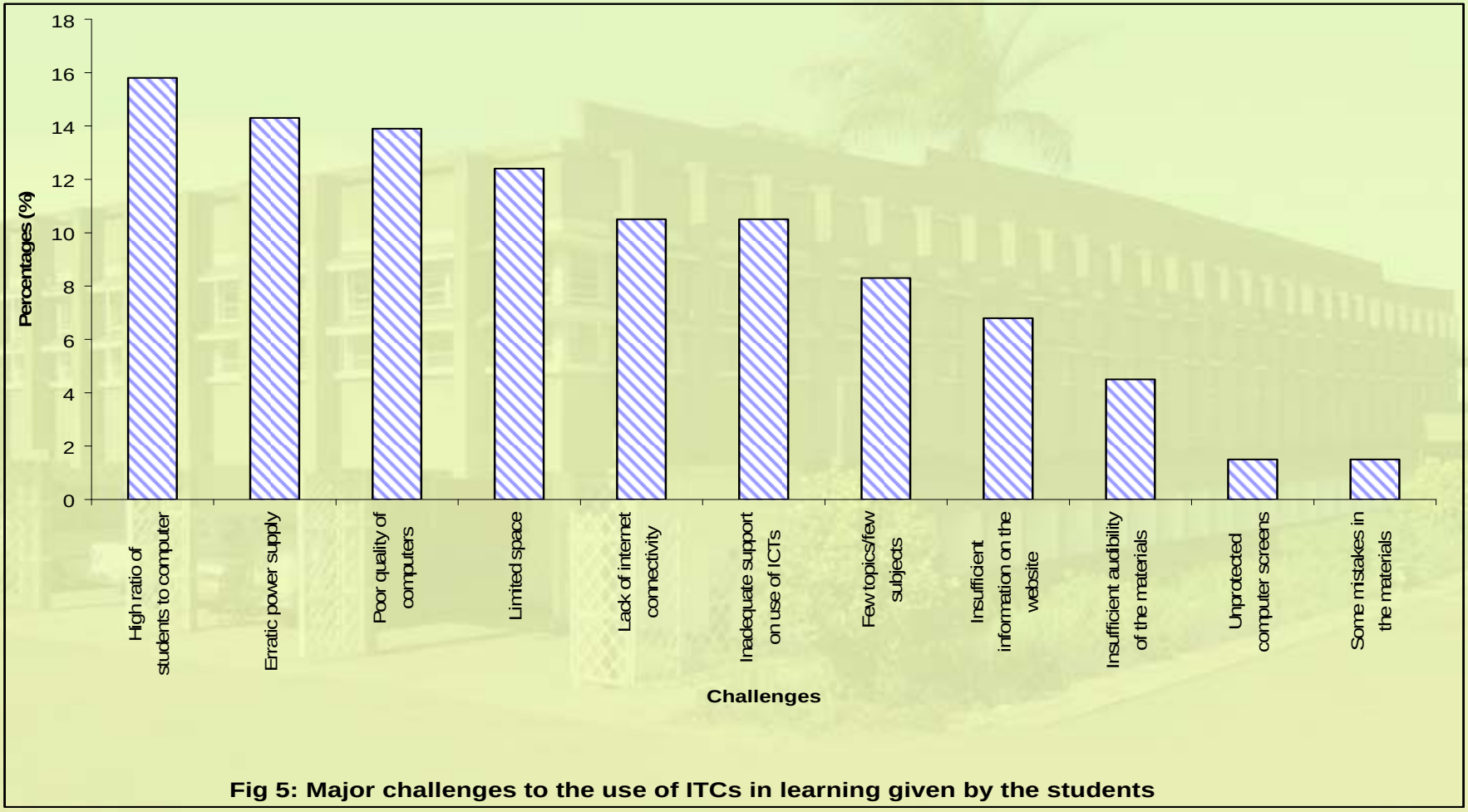

Fig 5: Major challenges to the use of ITCs in learning given by the students

The way forward for ICT in Education in Uganda

Currently, the Ministry of Education and Sports in Uganda, is in the final stages of developing the ICT in Education policy to which CurriculumNet has grossly contributed.

The government of Uganda has also gone ahead to establish the Ministry of Information and Communication Technology that will be coordinating all policies on ICT in Uganda.

As of now, the Parliamentary committee on ICT recently passed a resolution to the Ministry of Education and Sports recommending the equipping of all government aided Secondary Schools with atleast 10 computers each.

More to that, the government is much more involved in the ICT in Education initiatives that are coming up, now that they have realized how good ICTs can be to the learning of students.

This is significantly visible with the e-NEPAD initiative that is being piloted in Uganda.

But most significant of these developments, is the realization of the impact and positives of the CurriculumNet project, whose activities are now being implemented and integrated into the national education system, to provide alternative learning / teaching tools for schools in Uganda using computers.

However, this effort is not enough to guarantee success of the program, a lot should be done to support these activities for the learners are many, the schools are increasing and the technology fast growing.

The support needed to have effective ICTs in Education in Uganda is mainly in technology infrastructure development and setup, development and increase of resource persons in digital materials production and the financial clout to afford the development, production and implementation of these technology innovations in schools.